PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-020390
(43)Date of publication of application : 23.01.2001

(51)Int.Cl. E04B 1/58
E04B 1/24
F16B 7/20

(21)Application number : 11-189165
(22)Date of filing : 02.07.1999

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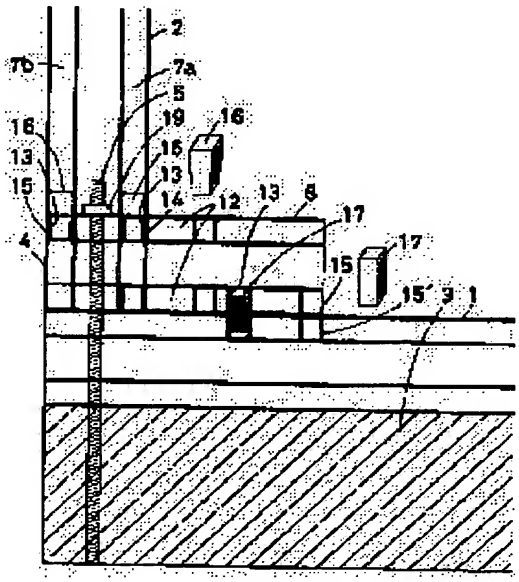
(54) CONNECTION STRUCTURE, MEMBER AND JOINT

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a connection structure capable of performing connection work in a comparatively short time.
SOLUTION: This connection structure is provided with a first member 4 and a second member 6 having recessed parts, intermediate joints 12, 15 which are pressure-fitted between the recessed parts of the first member 4 and the second member 6 and have connection holes 13 opened in the orthogonal direction to the direction of connection, a connection joint 16 whose a part is pressure-fitted in the connection hole 13, and a support column 2 and a groundsill 1 having recessed parts connected to a remaining protruding part of the connection joint 16. It has protruding bars 14 (18) which are formed between the recessed part and intermediate joints 12, 15, between the connection hole 13 and the connection joint 16, and between the connection hole 13 and a recessed part of the support column 2 and are crushed by pressure-fitting.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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CLAIMS

[Claim(s)]
[Claim 1] The medium joint which has the connection hole which carries out opening in the direction which is ****(ed) between said crevices of the 1st member and the 2nd member which have a crevice, and the said 1st member and the 2nd member, and intersects perpendicularly in the connection direction, It has the connection joint which a part **** in said connection hole, and the 3rd member which has the crevice connected with the remaining lobe of this connection joint. Connection structure of having each projected part between said connection holes and said connection joints and between said connection holes and said crevices of said 3rd member in which is formed in either at least and crushing is carried out by **** between said crevices and said medium joints.
[Claim 2] Said medium joint is the connection structure according to claim 1 where are L typeface and said the 1st member and said 2nd member are connected by crossing.
[Claim 3] Said medium joint is the connection structure according to claim 1 where are L typeface, the inclined plane where said the 1st member and said 2nd member contact an edge for each other is formed, and the ends of said medium joint are connected with these inclined planes.
[Claim 4] Said connection joint is connected with the vertical side of said 1st member and said 2nd member. Said member of 3 connected with said connection joint which projects on the top face of said 1st member and said 2nd member is a column. Claim 1 said whose member of 3 connected with said connection joint which projects on the underside of said 1st member and said 2nd member is the base of a building, connection structure according to claim 2 or 3.
[Claim 5] The member which it is an extrusion-molding object, and hollow is divided by the septum, and has the protruding line which can be crashed to said septum and inner surface.
[Claim 6] The joint which cuts an extrusion-molding object and has the protruding line which can be crashed on an inner surface and an outside surface.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the member and joint which are used for the connection structure applied to connection between the base of a building, a column, a beam, a crosspiece, a horizontal member, etc., and connection.
[0002]
[Description of the Prior Art] conventionally, timber and a steel frame use it for the column of a building -- having -- as a connection means -- the former -- a nail -- it ****s, ** etc. is used and, as for the latter, a screw thread, welding, etc. are used.
[0003]
[Problem(s) to be Solved by the Invention] However, all needed time and effort and time amount for the connection activity, and were inefficient.
[0004] Therefore, the object of this invention is offering the connection structure, member, and joint which can do a connection activity comparatively in a short time.
[0005]
[Means for Solving the Problem] The 1st member and 2nd member in which connection structure according to claim 1 has a crevice, The medium joint which has the connection hole which carries out opening in the direction which is ****(ed) between said crevices of said 1st member and the 2nd member, and intersects perpendicularly in the connection direction, It has the connection joint which a part **** in said connection hole, and the 3rd member which has the crevice connected with the remaining lobe of this connection joint. It has each projected part between said connection holes and said connection joints and between said connection holes and said crevices of said 3rd member in which is formed in either at least and crushing is carried out by **** between said crevices and said medium joints.
[0006] According to connection structure according to claim 1, straight-line connection, rectangular connection, etc. of the 1st member and the 2nd member can be performed with a medium joint, and the 3rd member can be connected with the 1st member and 2nd member in three dimensions with a connection joint. And since it is strongly combinable only by ****(ing), a connection activity can be done efficiently.
[0007] In claim 1, said medium joint is L typeface, said the 1st member and said 2nd member cross, and connection structure according to claim 2 is connected.
[0008] According to connection structure according to claim 2, there is the same effectiveness as claim 1.
[0009] In claim 1, said medium joint is L typeface, the inclined plane where said the 1st member and said 2nd member contact an edge for each other is formed, and, as for connection structure according to claim 3, the ends of said medium joint are connected with these inclined planes.
[0010] According to connection structure according to claim 3, there is the same effectiveness as claim 1.
[0011] Connection structure according to claim 4 is set to claim 1, claim 2, or claim 3. Said connection joint is connected with the vertical side of said 1st member and said 2nd member. Said member of 3 connected with said connection joint which projects on the top face of said

1st member and said 2nd member is a column, and said member of 3 connected with said connection joint which projects on the underside of said 1st member and said 2nd member considers as the base of a building.
[0012] According to connection structure according to claim 4, there is the same effectiveness as claim 1, claim 2, or claim 3.
[0013] A member according to claim 5 is an extrusion-molding object, and hollow is divided by the septum and it has the protruding line which can be crashed to said septum and inner surface.

[0014] According to the member according to claim 5, a member comrade can be connected according to an easy connection activity through the joint which crashes and attaches a protruding line.
[0015] A joint according to claim 6 cuts an extrusion-molding object, and has the protruding line which can be crashed on an inner surface and an outside surface.
[0016] According to the joint according to claim 6, an outside surface is connected with other connection members, another joint is connected with an inner surface, and connection of a three-dimensional member is attained. And the connection activity for joining together by crushing of a protruding line becomes easy.
[0017]
[Embodiment of the Invention] Drawing 4 explains the gestalt of 1 implementation of this invention from drawing 1 . That is, this connection structure connects the corner section and the column 2 of a base 1 of a building.
[0018] A base 1 is installed in a mat foundation 3 through anchor bolt 5. A base 1 and a column 2 have the structure where the cross section was divided into nine space in the shape of a grid so that the hollow of an rectangular pipe may be formed in the shape of #, for example, they are formed of extrusion molding of metals, such as aluminum.
[0019] As shown in drawing 2 , it is laid so that the 1st member 4 and 2nd member 6 may intersect a right angle at the corner section of a base 1. The 1st member 4 and 2nd member 6 have the same cross-section structure as column 2 grade, and extrusion molding is carried out by aluminum etc. Moreover, the protruding line 8 of the plurality of cross-section Yamagata which is the projected part which can crash the 1st member 4, 2nd member 6, base 1, and column 2 by forcing to the inner surface of four space 7a-7d of the corner of the space divided in the shape of a grid, or a large number is really formed in a longitudinal direction with shaping. That is, these members are extrusion-molding objects, and hollow is divided by the septum 30 and they have the protruding line 8 which can be crashed to a septum 30 and an inner surface.
[0020] The 1st member 4 forms in the space 7a and 7d of the 1st member 4 the notching 9 which carries out opening, forms the opening 10 which is open for free passage to four places of the top face of the 1st member 4 in Space 7a and 7b in the side face in which the 2nd member 6 contacts further, and forms opening (not shown) which is open for free passage to two places of the underside of the 1st member 4 in Space 7c and 7d. The 2nd member 6 forms in two places of an underside opening (not shown) which is open for free passage to Space 7c and 7d. In addition, the bolt breakthrough 11 is formed in the center of an edge of the 1st member 4.
[0021] The 1st medium joint 12 forms two or more connection holes 13 in the direction which intersects L typeface perpendicularly with nothing and the stretch direction of the 2-way. This connection hole 13 and the opening 10 formed in space 7a with notching 9 are formed so that it may have consistency, when the 1st medium joint 12 is ****(ed) to space 7a with the notching 9 of the 1st member 4. Moreover, many protruding lines 14 of cross-section Yamagata which is the projected part in which crushing is carried out to the side face of the 1st medium joint 12 by **** are formed near the center of the 1st medium joint 12 so that it may extend in the direction which intersects perpendicularly with a longitudinal direction (the connection direction). Moreover, the same protruding line 14 forms also in the inner surface of the connection hole 13. If the piece of the 1st medium joint 12 is ****(ed), respectively to the space 7a and 7d with the notching 9 of the 1st member 4 and the other pieces of the 1st medium joint 12 are ****(ed) to the space 7b and 7c of the 2nd member 6, the 1st member 4 and 2nd member 6 will be connected mutually. At this time, it crosses, and the Space [7a-7d] protruding line 8 and the

protruding line 14 of the 1st medium joint 12 will gear and crash, and will be in a strong integrated state.
[0022] Although the 2nd medium joint 15 is a straight line-like and the other configuration is the same as that of the 1st medium joint 12, the protruding line 14 of the lateral surface is formed only in the range of the one half of a longitudinal direction. These medium joints 12 and 15 cut an extrusion-molding object, and have the protruding line 14 which can be crashed on an inner surface and an outside surface.
[0023] The 2nd medium joint 15 is ****(ed) by space 7b with the opening 10 of the 1st member 4, the space 7c and 7d which carries out opening to an edge with the notching 9 of the 1st member 4, and the edge of an opposite hand, and the space 7c and 7d which carries out opening to an opposite hand the connection side to the 1st member 4 of the 2nd member 6, respectively.

[0024] In this case, one opening (not shown) adjusted in the connection hole 13 of the 2nd medium joint 15 of the 1st member 4 and the 2nd member 6 is formed at a time, respectively. Moreover, 2nd medium joint 15' is attached in the space 7a and 7b of a base 1, respectively, and opening adjusted in the connection hole 13 is formed in opening to the 3rd medium joint 15 formed in the 1st member 4 and 2nd member 6, and the location to adjust.
[0025] The 1st connection joint 16 is an object for column connection, an end is formed in the dimension included in the space 7a-7d of a column 2, and the other end is formed in the dimension included in the opening 10 smaller than it and the connection hole 13. The 2nd connection joint 17 is formed in the dimension with which it is an object for base connection and ends go into the connection hole 13. Many protruding lines 18 of cross-section Yamagata which is the projected part crashed by **** on the side face of the 1st connection joint 16 and 17 are formed in the direction which intersects perpendicularly with the longitudinal direction of the protruding line 8 of the 1st member 4, the 2nd member 6, a column 2, and a base 1. The 1st connection joint 16 is ****(ed) by the connection hole 13 of the medium joints 12 and 15 of the 1st member 4 through opening 10, respectively, and it is combined by crushing. On the other hand, the abbreviation one half of the overall length of the 2nd connection joint 17 is attached in the connection hole 13 of the 2nd medium joint 15 attached in the base 1 through opening.
[0026] Thus, while letting anchor bolt 5 pass for the 1st member 4 and 2nd member 6 which were connected to the bolt breakthrough 11, the 2nd connection joint 17 which projected from the base 1 is attached by pressing the 1st member 4 and 2nd member 6 through opening in the connection hole 13 of the 2nd medium joint 15 of the 1st member 4 and the 2nd member 6, and a nut 19 is bound tight to anchor bolt 5. Next, the upper bed section of the connection joint 16 is attached in the space 7a-7d of the soffit section of a column 2, and it combines with it. Therefore, assembly is performed by the activity of a connection activity [in a site] driving **** of the 1st member 4 and the 2nd member 6 in a base 1 from a top, and then driving a column 2 in the 1st connection joint 16.
[0027] Drawing 3 is the frame of the building of the third floor built using this connection structure. As for **** and 21, 20 is [**** and 22] roofs.
[0028] Drawing 4 is the enlarged drawing of the connection section of a column and a beam. If a straight-line-like medium joint is used, since connection of the longitudinal direction of a beam is possible, the auxiliary accouplement 24 of the same structure as a column etc. can be added if needed, and the structure of drawing 2 can be applied to each joining segment.
[0029] Drawing 5 makes the plane of composition of the 1st member shown in drawing 2 , and the 2nd member an inclined plane 27, and a medium joint and a connection joint can use the same thing.
[0030] In addition, in this invention, that what is necessary is just to have each projected part between a connection hole and a connection joint and between a connection hole and said crevice of the 3rd member in which is formed in either at least and crushing is carried out by **** between a crevice and a medium joint, when a projected part is formed in both like the gestalt of operation, it does not restrict.
[0031]
[Effect of the Invention] According to connection structure according to claim 1, straight-line

connection, rectangular connection, etc. of the 1st member and the 2nd member can be performed with a medium joint, and the 3rd member can be connected with the 1st member and 2nd member in three dimensions with a connection joint. And since it is strongly combinable only by ****(ing), a connection activity can be done efficiently.

[0032] According to connection structure according to claim 2, there is the same effectiveness as claim 1.

[0033] According to connection structure according to claim 3, there is the same effectiveness as claim 1.

[0034] According to connection structure according to claim 4, there is the same effectiveness as claim 1, claim 2, or claim 3.

[0035] According to the member according to claim 5, a member comrade can be connected according to an easy connection activity through the joint which crashes and attaches a protruding line.

[0036] According to the joint according to claim 6, an outside surface is attached in other connection members, another joint is connected with an inner surface, and connection of a three-dimensional member is attained. And the connection activity for joining together by crushing of a protruding line becomes easy.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the sectional view of the corner join structure of the gestalt of 1 implementation of this invention.
[Drawing 2] It is the partial decomposition perspective view.
[Drawing 3] It is the front view of the frame of a building.
[Drawing 4] It is the elements on larger scale of the connection configuration of the column and beam.
[Drawing 5] It is the partial perspective view of the corner join structure of the gestalt of another operation.
[Description of Notations]
1 Base
2 Column
3 Mat Foundation
4 1st Member
5 Anchor Bolt
6 2nd Member
7a-7d Space
8 Protruding Line
9 Notching
12 1st Medium Joint
13 Connection Hole
14 Protruding Line
15 2nd Medium Joint
16 1st Connection Joint
17 2nd Connection Joint
18 Protruding Line
19 Nut

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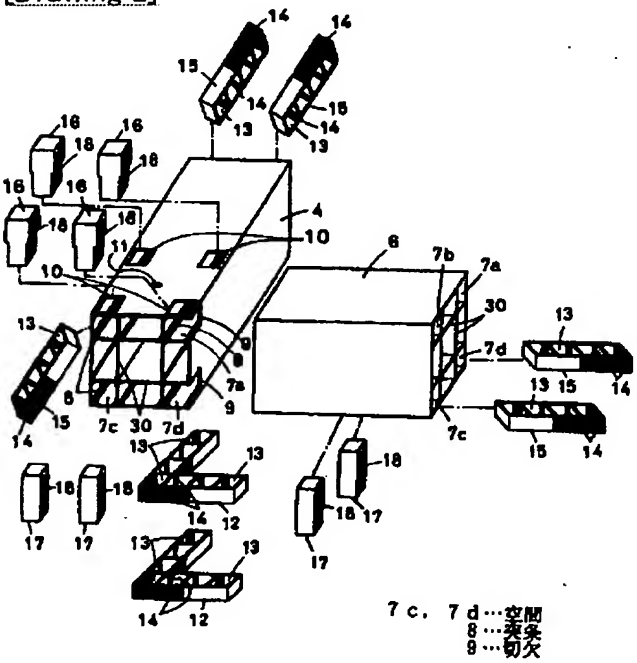
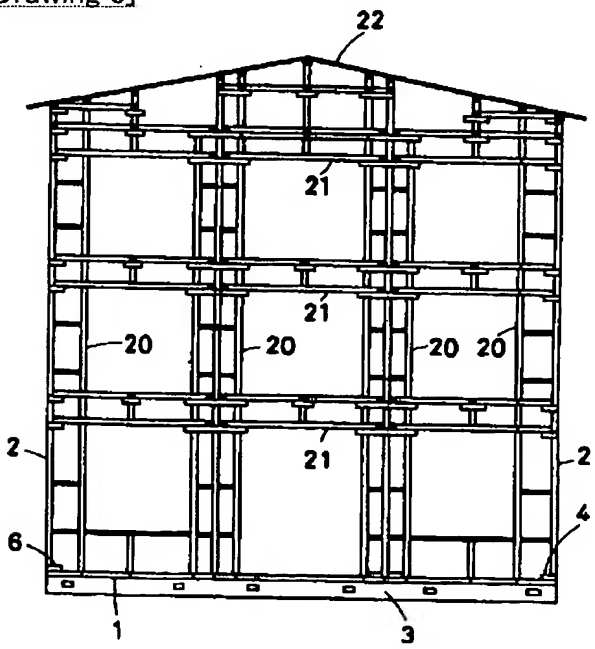
DRAWINGS

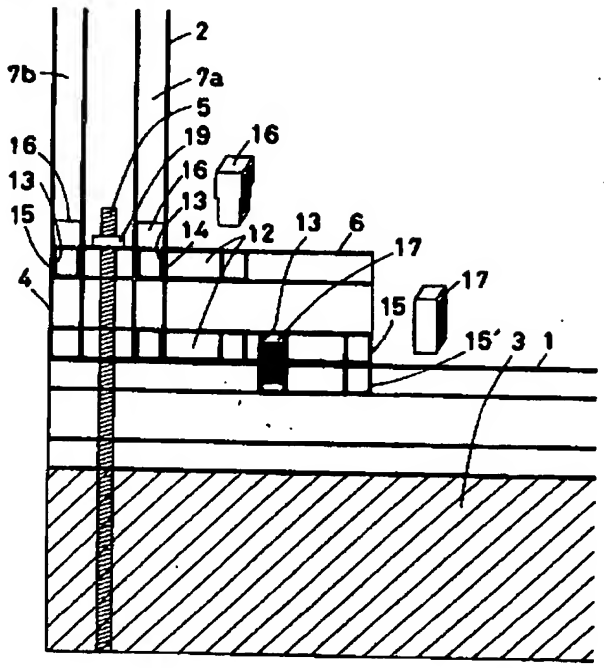
[Drawing 2]



[Drawing 3]

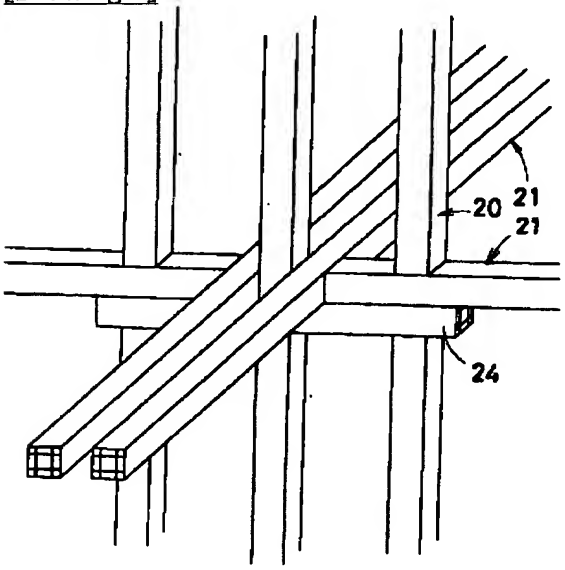


[Drawing 1]

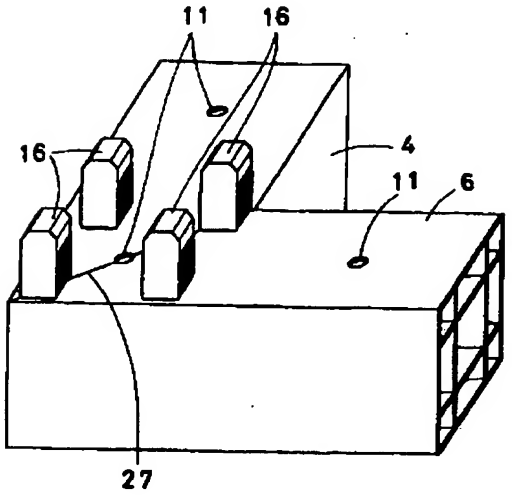


1…土台
2…柱
3…布基礎
4…第１の部材
5…アンカーボルト
6…第２の部材
7a，7b…空間
12…第１の中間継手
13…連結穴
14…突条
15…第２の中間継手
16…第１の連結継手
17…第２の連結継手
18…突条
19…ナット

[Drawing 4]



[Drawing 5]



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